Prospectus Supplement No. 3 (To Prospectus dated April 28, 2008)

NOVELOS THERAPEUTICS, INC.

12,000,000 shares of common stock

This prospectus supplement supplements the Prospectus dated April 28, 2008, relating to the resale of 12,000,000 shares of our common stock. This prospectus supplement should be read in conjunction with the Prospectus.

Sale of Common Stock

On August 14, 2008, we entered into a securities purchase agreement covering the issuance and sale of an aggregate of 4,615,384 shares of our common stock (the "New Restricted Shares") in a private placement to two related accredited investors at \$0.65 per share.

The purchase agreement provides that on and after six months following the closing, if there is not an available exemption from Rule 144 under the Securities Act to permit the sale of the New Restricted Shares by the purchasers, then we will use our best efforts to file a registration statement under the Securities Act with the SEC covering the resale of the New Restricted Shares. It further provides that we will use our best efforts to maintain the effectiveness of such registration statement until one year from closing or until all the New Restricted Shares have been sold or transferred; whichever occurs first.

The purchase agreement also provides that if, prior to our public announcement of the conclusion of our NOV-002 Phase III clinical trial in non-small cell lung cancer (the "announcement date"), we complete a subsequent equity financing (as defined therein) and the holders of shares of our Series D Preferred Stock ("the Series D Shares") receive a reduction in the effective conversion price or exercise price, as applicable, of the Series D Shares or common stock purchase warrants issued in connection with the issuance of the Series D Shares or receive additional shares of Common Stock, as consideration in connection with any consent given by the holders of Series D Shares, then the purchasers shall be entitled to receive substantially equivalent consideration, on a proportional basis, in the form of additional shares of Common Stock based on the formula detailed in the purchase agreement. On and after the announcement date we have no further obligation to deliver additional shares of common stock under the purchase agreement.

On August 15, 2008, we closed the sale of the New Restricted Shares described above, receiving aggregate gross proceeds of approximately \$3 million.

The sale of the New Restricted Shares was exempt from registration under Section 4(2) of the Securities Act.

Resignation of Director

On August 12, 2008, Simyon Palmin, one of our founders, resigned from our board of directors for personal reasons. Mr. Palmin currently remains an employee in the role of director of Russian relations. We expect that he will transition to the role of a non-employee consultant prior to year end.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page 6 of the Prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus supplement. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is August 18, 2008